

AP Statistics Quiz
Chapter 14 and 15

Name: _____

Use the following information for questions 1 and 2:

In an AP Statistics class, 57% of students eat breakfast in the morning and 80% of students floss their teeth. Forty-six percent of students eat breakfast and also floss their teeth.

1. What is the probability that a student from this class eats breakfast but does not floss their teeth?
 - a. 9%
 - b. 11%
 - c. 34%
 - d. 57%
 - e. 91%
2. What is the probability that a student from this class eats breakfast or flosses their teeth?
 - a. 9%
 - b. 11%
 - c. 34%
 - d. 57%
 - e. 91%

Use the following information for questions 3 and 4:

According to the National Telecommunication and Information Administration, 56.5% of U.S. households owned a computer and 50.5% had Internet access in 2001.

3. What is the probability that of three randomly selected U.S. households at least one owned a computer in 2001?
 - a. 18.0%
 - b. 43.5%
 - c. 56.5%
 - d. 82.0%
 - e. 91.8%
4. What is the probability that four randomly selected U.S. households all had Internet access in 2001?
 - a. 6.5%
 - b. 12.6%
 - c. 49.5%
 - d. 50.5%
 - e. 93.5%

5. A fair coin has come up “heads” 10 times in a row. The probability that the coin will come up heads on the next flip is
- Less than 50%, since “tails” is due to come up.
 - 50%.
 - Greater than 50%, since it appears that we are in streak of “heads”.
 - 0%, since there is no way that the coin will come up heads again.
 - It cannot be determined.

For #6-8, show any necessary work.

6. You believe that there is a 20% chance that you will earn an A in your English class, a 10% chance that you will earn an A in your Physics class, and 5% chance that you will earn an A in both classes.
- Find the probability that you do not get an A in either English or Physics.
 - Are “earning an A in English” and “earning an A in Physics” disjoint events? Explain.
 - Are “earning an A in English” and “earning an A in Physics” independent events? Explain.

7. A manufacturing firm orders computer chips from three different companies: 10% from Company A; 20% from Company B; and 70% from Company C. Some of the computer chips that are ordered are defective: 4% of chips from Company A are defective; 2% from Company B are defective; and 0.5% from Company C are defective. A worker at the manufacturing firm discovers that a randomly selected computer chip is defective. What is the probability that that the chip came from Company B? **Show your work** (suggestion: draw a tree diagram).

Extra Credit (2 points)

There are two games involving flipping a coin. In the first game, you win a prize if you can throw between 45% and 55% heads. In the second game, you win if you can throw more than 80% heads. You have the option for both games of either flipping the coin 30 times or 3,000 times. Which choice would give you the greatest chance of winning both games?

- 30 times for each game.
- 3,000 times for each game.
- 30 times for the first game and 3,000 times for the second game.
- 3,000 times for the first game and 30 times for the second game.
- It doesn't matter, the number of times I flip a coin will have no effect on the outcomes.